AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Claim 1-24 (Canceled)

Claim 25 (Currently amended). A method for distributing a reference time in a network having a plurality of nodes, the method comprising the steps of:

generating a network-wide time signal using a reference time generator; ~~and~~

distributing the network-wide time signal over the network to the plurality of nodes ~~the method characterized by the steps of:~~;

measuring a signal propagation delay of the network-wide time signal between the reference time generator and each of the plurality of nodes;

~~converting~~generating, at each respective node, ~~the network-wide time signal to~~ a local synchronization signal using the signal propagation delay of the respective node, as required by a respective application; and

synchronizing the timing of each node for the respective application using the local synchronization signal.

Claim 26 (Cancelled).

Claim 27 (Previously presented). The method of claim 26, wherein the step of tracking is further characterized by the steps of:

maintaining a network-wide time signal as a network cycle master signal at a designated cycle master node of the plurality of nodes of the network maintaining a local cycle master signal at each respective node of the network; and

determining the signal propagation delay at each respective node from the difference between the respective local cycle master signal and the network cycle master signal.

Claim 28 (Previously Presented). The method of claim 27, characterized in that the network

cycle
master signal and each local cycle master signal is stored in a respective network cycle master register and local cycle master register, at each respective node.

Claim 29 (Previously Presented). The method of claim 25, characterized in that the network-wide time signal is a house synchronization (synch) signal.

Claim 30 (Previously Presented). The method of claim 25, characterized in that the local synchronization signal has an associated frequency.

Claim 31 (Previously Presented). The method of claim 25, characterized in that the step of synchronizing includes the step of:

phase locking the local synchronization signal to a predetermined cycle value.

Claim 32 (Previously Presented). The method of claim 25, characterized in that the step of synchronizing includes the step of:

performing delay compensation at each respective node.

Claim 33 (Previously Presented). The method of claim 32, characterized in that the delay compensation is performed by adding an extra signal delay to the local synchronization signal.

Claim 34 (Previously Presented). The method of claim 25, characterized in that the plurality of nodes includes:

at least one IEEE 1394-compliant node.

Claim 35 (Previously Presented). The method of claim 25, characterized in that the step of generating the network-wide time signal includes the step of:

utilizing a rubidium reference signal generator.

Claim 36 (Previously Presented). The method of claim 25, characterized in that the

step of generating the network-wide time signal includes the step of:

utilizing a global positioning system (GPS)-based reference signal generator.

Claim 37 (Currently Amended). A system comprising:

a network including a plurality of nodes and a reference time generator for generating a network-wide time signal,[[;]] wherein a designated node of the plurality of nodes is connected to the reference time generator, and has means adapted to distribute the network-wide time signal over the network to the plurality of nodes,

characterized in that each node of the plurality of nodes of the network has means adapted to measure a signal propagation delay of the network-wide time signal between the reference time generator and each node and generate ~~convert the network-wide time signal to~~ a local synchronization signal using the signal propagation delay, as required by a respective application, and has means adapted to synchronize the timing of each node for the respective application using the local synchronization signal.

Claim 38 (Cancelled).

Claim 39 (Previously Presented). The system of claim 38, characterized in that the designated node has means adapted to maintain the network-wide time signal as a network cycle master signal; and each respective node of the plurality of nodes has means adapted to maintain a local cycle master signal, and has means adapted to determine a respective signal propagation delay at each respective node from the difference between the respective local cycle master signal and the network cycle master signal.

Claim 40 (Previously Presented). The system of claim 39, characterized in that the designated node includes a network cycle master register for storing the network cycle master signal: and each node of the plurality of nodes of the network includes a respective local cycle master register for storing the local cycle master signal.

Claim 41 (Previously Presented). The system of claim 37, characterized in that the plurality of nodes includes:

at least one IEEE 1394-compliant node.

Claim 42 (Previously Presented). The system of claim 37 being adapted for facilitating timing functions in a network (100), the system characterized by:

each node having means adapted to perform local timing control; and

a plurality of applications using timing functions under local timing control, with each node of the plurality of nodes associated with at least one application

wherein each node of the plurality of nodes of the network has means adapted to synchronized the at least one application associated with the respective node using the local synchronization signal.

Claim 43 (Previously Presented). The system of claim 42, characterized in that the designated node has means adapted to maintain the network-wide time signal as a network cycle master signal in a network cycle master register; and

each node has means adapted to track signal propagation delay using the network-time signal, and has means adapted to convert the network-time signal by generating the local synchronization signal using the signal propagation delay of the respective node, to maintain a respective local cycle master signal in a respective local cycle master register, and to determine a respective signal propagation delay at each respective node from the difference between the respective local cycle master signal and the network cycle master signal.

Claim 44 (Previously Presented). The system of claim 42, characterized in that the plurality of nodes includes: at least one IEEE 1394-compliant node.